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The JOURNAL
OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

PHYSICIANS' PRAYER*

"Pray to the Gods for a fair measure of the love of science, a good memory, a quiet manner, the accurate use of your hands and your senses, and the necessity of making money. Pray even for opposites; for humility and pride, for plodding business-ways and for the wings of ambition, for a will both stubborn and flexible; and, above all, for that one gift which has been the making of the grace of simplicity of purpose."

—James Paget.

*From Confessio Medici.

54th Annual Meeting — Tulsa, Oklahoma — May 14, 15, 16

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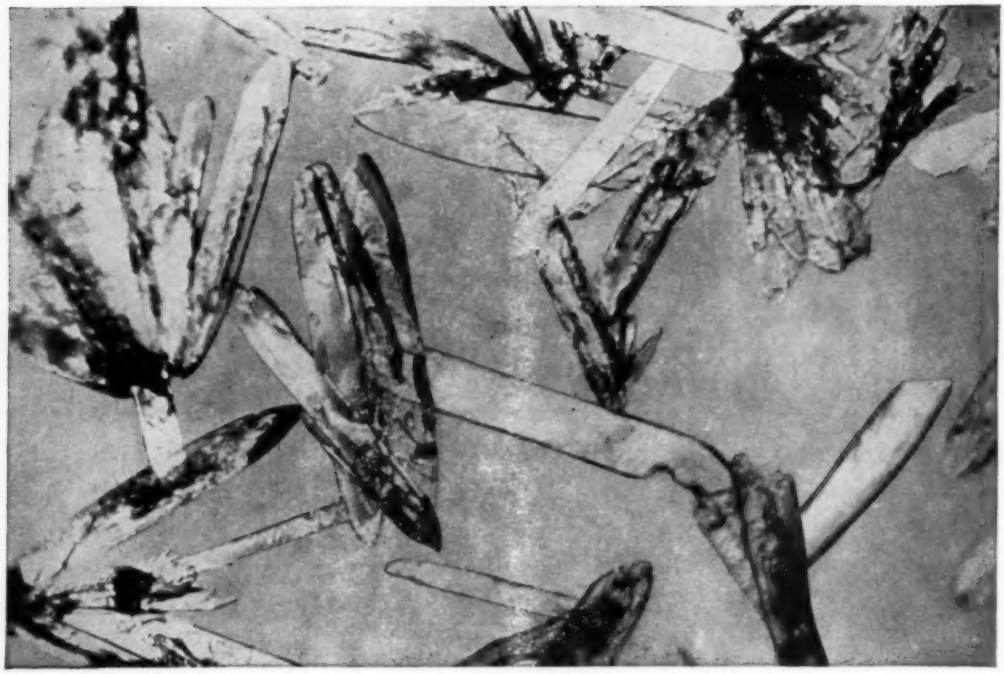

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THE JOURNAL
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EDITORIALS

PHYSICIAN AND SURGEON

Do you remember having seen this combination on the doctor's shingle at the turn of the century? In a broad sense it is unfortunate that this designation is passing. But with present educational methods and the grand marathon with national boards of certification as the goal, young doctors are led to the false conclusion that there is not time for experience in general practice. Service in hospital wards is not comparable to practice in the homes of the people. No doctor can be universally adequate in both the art and science until he has encompassed society and studied the cross section from hovel to mansion.

When Harvey Cushing, in 1922, gave his presidential address before the American College of Surgeons on "The Physician and Surgeon," he introduced his discourse by a quotation from Lanfranc: "Why in God's name in our days is there such a great difference between the physician and the surgeon? . . . It ought, however, to be understood that no one can be a good physician who has no idea of surgical operations, and that a surgeon is nothing if ignorant of medicine. In a word, one must be familiar with both departments of medicine." Though these words preceded the printing press, the separation of medicine and surgery was troubling Cushing when he spoke to his fellow surgeons on this occasion.

Since Cushing's warning, we have widened the breach between the physician and the surgeon, and the gaping chasm has confused the public. There must be a happy medium between the indiscriminate referring of patients for highly specialized services. The good physician should see the patient as a composite whole — mind and body — and comprehend his needs. Having met this obligation with diagnostic skill, he will employ wise discrimination and sane therapy, including the aid of the specialist when conditions demand. There is a great satisfaction in being able to tell the specialist what is going on and why the patient is being referred. It is worthwhile to remember that in the end comprehensive knowledge and diagnostic skill are remunerative. The medical student who hurries through school, secures his degree, and scrambles for certification in a specialty with no experience in general practice, stands a fine chance of missing the mark. He may know diseased conditions in his narrow field but he will never comprehend their full significance. He will never know his patient as well as his patient knows him. The doctor who does not probe his patient's soul until he hits paying dirt is a failure. His penetrating knowledge must come as a surprise to the patient and thereby inspire great faith and confidence. This is not a gift from the gods, but an art based upon experience in all walks of life.

It is through general practice that we get at the matrix of human nature. It is the key to successful specialization. The young doctor is urged to try it. As life proceeds, even though specialization is ultimately sought, the time will not be missed. Borrowed money can be repaid, but opportunity thrown to the winds cannot be retrieved. Don't be afraid of work. A great medical philosopher has said that the iron in your crown is more valuable than the gold. Whether you succeed or not, in silent hours as age comes on there will be sad moments if you miss the stimulating experience of general practice.

THE STATE MEETING

The next meeting of the State Medical Association will convene in Tulsa May 13 to 15. It is not too early to make plans. All officers and committees should be actively engaged in the performance of their duties and they should have the full cooperation of every member of the Association.

Those who are invited to participate in the program should make prompt decisions in order that the building of a creditable program may be expedited. Those who agree to appear on the program should remember that the manuscript ultimately will come to the Editorial Board where it will be considered for publication. The Editorial Board would like to approve every manuscript for the Journal but Oklahoma's medical rating at home and abroad is largely dependent upon the scientific quality of the Journal. Obviously it is the duty of the Editorial Board to set reasonable standards and to see that they are met.

Many of the manuscripts accepted for publication must be made to conform to the established policies and standards through careful editing. Some must be abbreviated, but when changes are made the editors are careful not to alter the character or meaning of the scientific content. Such alterations are not to be construed as a reflection upon the author.

Since the space for scientific material is limited occasionally it becomes necessary for the Board to choose the most suitable manuscripts and leave some unpublished. This choice is based chiefly upon the Board's judgment of scientific and clinical values. Always the essayist may count on the generous cooperation of the Board.

Those who are preparing manuscripts may find helpful suggestions under the Journal masthead, opposite the table of contents. Dr. Samuel Johnson once said, "Give nights and days, sir, to the study of Addison, if you mean to either be a good writer, or what is more worthy, an honest man." It would be much easier and perhaps immediately more helpful to read *The Art of Plain Talk*[1] *by* Rudolf Flesch. Flesch is also the author of *Marks of Readable Style.*

(1) The Art of Plain Talk. Harper and Brothers: New York. 1946.

MEDICINE AND SELF-DISCIPLINE

In Theognis' book *Sayings to Cyrnus,* we find the following significant statement: "I have given you wings, Cyrnus, with which you will fly over land and sea. . . . At every feast and revel you will be on the lips of many a guest . . . and when you have gone down to the dead you will still wander through the land of Greece and the islands of the sea. . . ." Being warned against the treachery, deceit, and the wiles of the ignoble, the boy is urged to distinguish himself from the mob by truly noble self-discipline and behavior.

To the worthy student of medicine, Aesculapius says: "I have given you wings with which you will fly over the land and the sea where suffering humanity needs not only the elevating culture which Cyrnus sought, but the comfort and healing which medicine brings when it comprehends both the art and the science." True sons of Aesculapius will practice self-discipline and noble behavior. They will strive to uphold the honor of the high calling they have championed. Like Greek sculptors and poets depicting Olympian victors, they will strive for perfection within the ideal. They will not work for gain, but for the sake of service; for the coveted privilege of living in the hearts of their patients and with the hope of augmenting the good name of their profession as they "go down to the dead."

Success in medicine requires a religious comprehension of its purposes, opportunities, and responsibilities. The youth who is not willing to wring soul-torturing sweat from his vitals should not enter upon the study of medicine.

RESEARCH

What more can be said in these columns about research? Only this — research means sacrifice, often even unto death, for the benefit of humanity. Those who doubt should read *Banting's Miracle* by Seale Harris.[1] Few if any of the readers of this editorial will have the opportunities of the research worker. They must find some other way to serve. The truest service has the flavor of sacrifice. Give something to the Oklahoma Research Foundation even though it cuts to the quick. Such wounds always heal and the scars grow more honorable as time passes.

1. Harris, Seale: Banting's Miracle. Philadelphia: J. B. Lippincott. 1946.

There is more self love than love in jealousy.—*La Rochefoucauld.*

A jest loses its point when he who makes it is the first to laugh.—*Schiller.*

Joy is more divine than sorrow; for joy is bread and sorrow is medicine.—*Henry Ward Beecher.*

SCIENTIFIC ARTICLES

THE SURGERY OF DEAFNESS DUE TO OTOSCLEROSIS*

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It has been known for a long time that opening the labyrinth of a person suffering with deafness due to otosclerosis resulted in a temporary increase in hearing. Years ago Jenkins[1] and Baranay[2] and more recently Holmgren[3] and Sourdille[4] attempted to relieve deafness in cases of otosclerosis by making a fenestra in the bony capsule of the labyrinth. Sourdille performed his operations in three stages at intervals of four or five months. But it was Lempert[5] who perfected and popularized the operation. It was he who introduced the endaural, antauricular, extracartilaginous approach to the temporal bone and it was he who applied it to the fenestration of the labyrinth. He likewise never ceases in his struggle for improvement in operative results and consequently there are periodic changes in technique which in the long run are bound to result in advancement. But now there are many others, both in our country and abroad, who are performing this type of surgery and who will help to evaluate the operation and perhaps even contribute to its improvement.

There are, broadly speaking, two types of deafness, conductive deafness and perceptive deafness. Anything which interferes with the transmission of sound waves from the auricle through the external canal, membrana hympani and ossicles and middle ear to the cochlea is known as conductive or obstructive deafness. Anything which interferes with the transmission of sound waves from the cochlea to the auditory center in the brain is known as perceptive or nerve deafness.

Otosclerosis is a term used to describe a pathological change within the bony capsule of the labyrinth which consists of circumscribed, sharply defined, inlaid bony tumors. This types of pathological change has been found in routine autopsy examination of persons who were never known to have been deaf, such change being chiefly located in the region of the oval window, round window, cochlear capsule and fundus of the internal auditory meatus. As long as the lesion remains confined to the bony labyrinthian capsule, the individual has no symptoms of deafness, but once the otosclerotic tumor spreads beyond the endosteal or periosteal layer of bone forming the labyrinthian capsule in the region of the oval window, resulting in ankylosis of the footplate of the stapes, deafness ensues. The deafness which results from the pathological change known as otosclerosis is due to a fixation of the stapes in the oval window which in turn interferes with the transmission of sound waves to the cochlae. This places it in the category of conductive deafness. Lempert[6] suggests, that, from the scientific standpoint, the otologist has no right to refer to this form of deafness as otosclerosis unless he has histologic proof of the presence of the otosclerotic lesion, and suggests that we call it Clinical Otosclerosis which signifies that the deafness is suggestive but not positive evidence of the presence of otosclerosis.

Patients suffering from Clinical Otosclerosis often give a family history of deafness. They have a deafness for air-borne sound which is gradually or rapidly progressive, and involves the lower frequencies first but ultimately involves all frequencies. It usually begins early in life and is most frequently first noticed during the second decade of life, though it may be noted earlier or later. The hearing by bone conduction is prolonged over and above the hearing by air conduction. Such patients frequently hear better in noisy places than in quiet places. Tinnitus is a

*Presented at the Annual Meeting of the Oklahoma State Medical Association before the Section on Eye, Ear, Nose and Throat, May 1, 1946.

common complaint and may be either unilateral or bilateral, mild or severe, intermittent or continuous. Inflation of the eustachian tube does not produce improvement in hearing and the tubes are found to be patent. The tympanic membranes are often atrophic and extremely translucent, and in the more severe cases the mucous membrane lining the promontory of the cochlea may be seen as a pinkish hue shining through the membrana tympani. The hearing for bone conducted sound may remain near normal even though the hearing for air conducted sound may be down to the sixty or eighty or one-hundred decibel loss level.

There are, of course, great variations in this clinical picture of otosclerosis, but there are certain requirements which must be met before surgery can be considered. For example, the patient may have Clinical Otosclerosis but he may have sufficient cochlear degeneration as indicated by lowered bone conduction to make him an unsatisfactory subject for the operation. Therefore, before the fenestration operation can be considered, a diagnosis of Clinical Otosclerosis must be made. The hearing for conversational voice must be beyond the serviceable level which in terms of audiometric reading is below the thirty decibel level. The middle ear must be free of all infection and the drum must be intact. There must be reason for the otologist to suspect that within the ear selected for operation there still exists a reservoir of cochlear nerve function which is sufficient to permit improvement of hearing as a result of improving the air conduction mechanism by surgery.

The fenestration operation, then, is not designed to cure deafness or even to cure one particular type of deafness. It does not even attempt to remove the pathological lesion causing the deafness. It merely takes advantage of the fact that in a number of otosclerotic patients cochlear degeneration has not yet taken place and a new window can be made into the internal ear through which sound may again reach the cochlea which still has enough ability to function as to be able to return serviceable hearing to its owner. In this manner the old functionally impeded conducting mechanism is bypassed and a new sound conducting mechanism is substituted to carry sound waves to the cochlea.

The operation itself is a highly technical procedure which is performed through the endaural, antauricular, extracartilaginous approach. It requires special instruments, a specially trained operating team, and an entirely new concept of temporal bone surgery. In the performance of the operation the mastoid air cells are exonterated thoroughly, the attic is entirely exposed, the bony external auditory canal wall is removed from the membranous canal wall without damage to the latter, the upper portion of the annulus tympanicus is removed, the semicircular canals are skeletonized, the incus and head of the malleus are removed, the corda tympani nerve and stapes are exposed and of course, the facial nerve is plainly visible at all times in the thin bony covering of its horizontal portion from the region of the geniculate ganglion to the beginning of the vertical portion. The tympanic membrane is mobilized and a tympanomeatal flap is formed from the delicate skin of the external auditory canal wall which is still attached to the membrana tympani. When all this has been carefully and successfully done and the exposure is adequate and the horizontal canal and its ampulla is clearly defined along with the ampulla of the superior semicircular canal, the fenestration may be performed. This new window is made in the ampullated end of the horizontal semicircular canal which is also called the surgical dome of the vestibule. The fenestra must be made under magnification with very gentle strokes of fine polishing burrs. When the perilymphatic space is finally opened, the membranous horizontal semicircular canal may be seen as a fine transparent slender tube whose ampullated end dips inward to join the utricle of the vestibule. The new fenestra is separated from the oval window, containing the ankylosed footplate of the stapes, only by the horizontal portion of the facial nerve. During the fenestration the cavity must be kept meticulously free and clean of bone dust and bone chips. The new window is then covered by Shrapnels Membrane by laying the tympanomeatal flap so as to cover the attic and lay into the mastoid cavity, thus drawing Shrapnels Membrane over the newly created fenestra.

The results obtained from such a surgical procedure are at best imperfect. But if there exists in the operated ear a sufficient reserve of cochlear function to raise the hearing within the speech range above the thirty decibel loss level, the hearing is then restored to the practicable serviceable level and the patient can again hear without a hearing aid and voices and sounds are more normal than with a hearing aid. If one patient has a hear-

ing loss within the speech range of fifty decibels in the ear to be operated and gets an improvement of twenty-five or thirty decibels from the operation, he will have practical serviceable hearing restored. But, if another patient has a loss within the speech range of eighty decibels and receives an improvement of twenty-five or thirty decibels from the operation, he will not have practical hearing restored. He may then, however, continue to wear his hearing aid in his unoperated ear.

The two most frequent causes of imperfect results from this procedure are inflammation of the endolymphatic labyrinth and bony regeneration which tends to close the fenestra. Observation of signs and symptoms suggests that all patients undergo a post-operative labyrinthitis which subsides within a period of two or three weeks. The majority of patients recover from this without any permanent damage to the membranous labyrinth, but there are a few who never recover the hearing improvement which was lost during this time, thus indicating that permanent damage did occur to the endolymphatic labyrinth in those cases.

The other factor making permanent restoration of hearing uncertain once it has been obtained, is nature's attempt to close a bony defect. Nature will attempt to close this new window and may do so within a few months to a year or a year and a half. Appropriate steps are taken in each case to minimize the severity of the labyrinthitis and to reduce the changes of bony regeneration.

Complications following this type of surgery are rare. However, they do occur and may include facial paresis, purulent labyrinthitis, intracranial disease such as brain abscess or meningitis, hemorrhage into the labyrinth, and post-operative wound infection.

From the foregoing statements it is obvious that this surgical procedure does not cure the lesion causing this type of deafness although it may restore practical serviceable hearing. Even with the most careful selection of cases a number of patients will fail to regain their hearing. But there will be others whose hearing will be sufficiently restored to enable them to discard their hearing aids. When this occurs the results are far more gratifying to the patient than any benefits previously obtained by the use of the hearing aid. Furtheremore, restoration of satisfactory hearing by surgery aids in the prevention of further cochlear degeneration. Conversely, continued use of the hearing aid often lulls a patient into a false feeling of security from which he may suddenly awaken to find that his hearing aid is no longer an aid and his hearing has degenerated to the point where surgery would be of no value. His position at this stage is comparatively hopeless. Therefore, all persons who have lost practical hearing should have the benefit of examination to determine if they have a chance of having their hearing restored. If they are suitable candidates, they may be informed about the operation and allowed to decide at leisure after careful consideration whether or not they elect to undergo surgery. If the hearing is not improved, they can still use the hearing aid in the opposite ear. If the hearing is restored by surgery a new world is open to the patient and he has regained that which until recently was irrevocably lost.

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WORLD WAR II

The record made in World War II by American surgeons in their treatment of the wounded is enviable. To date the record shows that but 4.5 per cent of the wounded have succumbed. This is to be compared with a death rate of 8.26 per cent in wounded American soldiers in the American Expeditionary Forces in the first world war and a 10 per cent death rate which was recorded in wounded German soldiers during the first four years of the present war. This saving of life has been achieved primarily by the skill of American surgeons and their ability to develop rapidly the concepts which were necessary for the intelligent management of the wounded.

Few if any of the surgeons had experienced the flow of gross trauma which faced them when the battle was on and casualties began to pour in. Their conceptions respecting preoperative, operative and postoperative treatment had to be altered to fit the conditions under which they had to work. Their intellectual flexibility, their ingenuity at improvisation and their constant attention to detail in the care of the wounded provided a great tribute to the system of medical education which developed these surgeons. Their record was not equaled by that made by any other nation.

INSTITUTIONAL TREATMENT OF SYPHILIS*

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Institutional treatment of syphilis assumes the use of relatively short and intensive methods of therapy. That intensive methods may not only render the patient quickly non-infectious, but also achieve both early serologic and clinical cure, is a well-established fact. It may be recalled that Ehrlich thought he could eliminate the infective agent of syphilis, and that Pollitzer in 1910 obtained early cures by combining large doses of salvarsan with insoluble mercury salts; that Chargin and co-workers between 1936-39 achieved cures of infectious syphilis by massive arsenical therapy through intravenous drip, and that Mahoney in 1943 first demonstrated the cure of early infectious syphilis through the use of penicillin.

During the past ten years no less than fifty modifications of intensive treatment plans have been used. In general, all early procedures were modifications of existing methods, in that massive doses of arsenic combined with bismuth were given over a shorter period of time. The introduction of penicillin added a new instrument and modified all existing plans of treatment.

Earlier methods were dangerous and required expert management. Mortality under intravenous drip was about 0.3 per cent. Hospitalization was essential. Extensive laboratory tests were necessary for pretreatment evaluation of kidney and liver function, for ruling out active pulmonary tuberculosis and blood dyscrasias, for treatment control and post-treatment observation. Much was learned about arsenicals during the early days of massive treatment. We learned that signs of toxicity appear in the latter half of the treatment period, after about six to seven hundred milligrams of mapharsen had been administered. Predominant among signs of arsenic toxicity were hemorrhagic encephalopathy, with a poor prognosis; agranulocytosis with an equally grave prognosis; and febrile reactions. Many modifications of massive arsenotherapy were tried. All presented the problem of toxicity during the latter half of treatment.

The introduction by Mahoney in 1943 of penicillin in the treatment of syphilis was a great boon to all who were engaged in the hospital management of early syphilis. Though many were reluctant to adopt any new agent, penicillin soon became an accepted antiluetic therapeutic weapon. Penicillin, like arsenic, is a potent spirocheticide, as is shown by the rapid dissolution of lesions, by the approach to seronegativity in those patients who were positive, the maintenance of negativity in those who never became positive, and in the general low relapse rate.

In 1944, arsenic and bismuth in small amounts were added to penicillin to reduce still further the possibility of relapse. A combination of these three agents provided our present method of intensive therapy, which consists of penicillin, 1,800,000 units; mapharsen, 180-300 mgm.; and bismuth subsalicylate, 600 mgm. Upward of 50,000 patients have been treated to date by this method or one quite similar. No deaths have occurred which were attributed directly to treatment. In general, the relapse rate is between 15 per cent and 20 per cent. In the near future statistics will be available to show more exactly the results obtained by this standard method.

Advantages of rapid treatment methods in the program for control of venereal disease include the practical assurance of non-infectiousness within a short time, the prevention of spread of the disease by hospitalization of the patient during the infectious period, the assurance of adequate treatment to prevent late sequelae of inadequately treated or untreated syphilis, and the educational value of the methods employed. The latter applies to both the patient and the public. In addition to these advantages, rapid treatment has emphasized the value of quantitative serologic tests and necessity of early discovery and diagnosis. Rapid treatment is safely and effectively adaptable to infant congenital syphilis and syphilis in pregnancy. Indications are that massive combined treatment will also prove effective in management of early central nervous system lues, as well as tertiary syphilis of other types.

*Presented before the Annual Meeting of the Oklahoma State Medical Association, Section on Urology and Syphilology, May 1, 1946.

Disadvantages are the loss of time and income necessitated by hospitalization, and the necessity for mass rather than individualized treatment. With use of combined penicillin, mapharsen, and bismuth, the risk to the patient is no greater than with the use of conventional treatment. In the words of Dr. Udo Wile, "The incalculable benefits of the large number of patients successfully treated outweigh all of the disadvantages."

The optimum dosage, interval between injections, and duration of treatment have not yet been determined; therefore, it does not seem advisable at this time to recommend the treatment methods employed in rapid treatment centers for use in general practice. These methods should still be considered in the developmental stage, when rigid control is essential to an intelligent interpretation of results. Hospital treatment of syphilis is a definite forward step in venereal disease control. Established strictly as a war emergency measure, it will soon take its place in some modified form as the accepted regime for treatment of all early syphilis.

Institutional management of syphilis has adapted itself remarkably to the venereal disease control problem created by the war. It is the best method of removing infected persons quickly and effectively from circulation. Lesions are rendered darkfield negative within twelve hours under this management. The patient remains in the hospital ten days and is rendered non-infectious. Infectious relapses occur most frequently at about the sixth to eighth month after treatment. Possibility of relapse emphasizes the imperative need of serologic follow-up.

In classes conducted for instruction of patients, syphilis is explained in non-technical terms. All patients are impressed with the necessity for continued observation by a physician following treatment. They are told that relapse may occur, and how to determine whether they have been cured, have relapsed, or are serologic fast. They are made to understand the meaning of quantitative tests and are shown the pattern their tests should follow.

Those who observe patients following intensive therapy should be thoroughly conversant with quantitative serologic patterns, and acquainted with the various tests employed. The simple "positive" or "negative" report is not a satisfactory criterion for adequate post-treatment serologic observation. The quantitative determination is essential to an intelligent evaluation of the patient's progress following rapid treatment, and provides the facts necessary to guide the physician in his management of the patient and his infection.

There are many quantitative tests. The Kahn, Eagle, and Kolmer probably are the most widely employed. The Kahn test is employed in following the serologic progress of our patients. The following examples will illustrate several patterns which one may expect to encounter: (1) cured case, (2) prolonged decreasing titer — secondary, (3) reinfection — retreatment, (4) sero-relapse — retreatment, (5) prolonged decreasing titer — early latent.

ANNUAL MEETING

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MYOPIA*

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OKLAHOMA CITY, OKLAHOMA

Myopia is that refractive condition of the eyes in which rays that are parallel to each other when they fall upon the eye come to a focus in front of the retina.

Such a deceptively simple definition, which we have used since the time of Kepler in 1604, gives no intimation of the complexities involved in this problem. The status of myopia is still uncertain and controversial, but possibly a survey of some of the modern conceptions may help us to organize and consolidate our thoughts to some extent.

Traditionally most myopia has been classified as *axial* or so-called *typical* myopia, in which the refractive error was thought to be due to an axial elongation of the globe. A small percentage were considered due to other factors affecting the refraction, such as changes in curvature or density of the lens, increased index of refraction of the aqueous, forward displacement of the lens, increased curvature of the cornea, and accommodative *spasms*. These types were designated *curvature myopia, index myopia,* or *refractive myopia.*

Objectively the typical myopes appear to have a protrusion of the eyes, a small or negative angle gamma, deep anterior chambers, large pupils, and degenerative changes in the vitreous and fundus. The absence of accommodative effort with consequent lack of stimulation to convergence allows a latent or manifest divergence to develop. The effort to attain distinct distant vision frequently leads to a habit of squinting or squeezing the lids. By far the most important objective changes are those which occur intraocularly. As myopia develops, the vitreous loses its normal consistency, becoming fluid and filled with floating opacities. The choroid and retina become atrophic in the region of the papilla and the macula, and in some advanced cases macular hemorrhages occur. Lens opacities and retinal detachments are not infrequent complications of advanced myopia.

Subjectively the most commonly noted symptom is indistinct distant vision. In many cases, this disability seems to trouble the myope very little. Unless distinct vision is required for some specific purpose they frequently prefer their natural, uncorrected vision to which they have become accustomed. You have probably observed experiences similar to that of the highschool girl who returned to the office recently with the observation that although she appreciated her new glasses she thought things looked nicer without them, especially her boy friend, because she could see all his freckles when she wore her glasses. So, undoubtedly, the soft haze through which the myope sees his environment may be more conducive to a pleasant existence than a sharp distance acuity.

Symptoms of asthenopia occur frequently but seldom appear to be associated with accommodative effort. Many of the symptoms are probably due to the muscular imbalance characteristic of myopes. Lack of accommodative effort for near results in a lack of the normal stimulus to convergence, and the resulting divergence with secondary convergence insufficiency makes it difficult to maintain comfortable binocular vision for near. Rapid tiring of the eyes is a characteristic of myopia. An increased sensitivity to light and susceptibility to muscae volitantes are also noted. In high degrees of myopia, diffusion circles may cause a monocular diplopia.

There is a great deal of disagreement as to the nature of myopia. The present trend is away from the traditional theory of axial elongation toward the theory of normal biologic variation. Careful investigation showed that unless a myopia is of high degree (−9.00 or over), the axial length may be only one of several variable factors. It has been demonstrated in emmetropic eyes that the refraction of the cornea may vary from 37 to 48 diopters, the lens from 20 to 34 diopters and the axial length from 20 to 25 mm. Differing combinations of these variable

*Presented before the Section on Eye, Ear, Nose and Throat, Oklahoma State Medical Association, Annual Meeting, May 3, 1946.

factors may include all eyes in the refractive ranges from −9.00 to +6.00. The mathematical calculation of a curve involving these variables and an actual curve constructed from investigations made by Steiger shows that the theoretical biologic variation closely approximates the actual incidence of refractive errors. These findings led him to consider myopia as a normal physiological variant rather than a distinct process. However certain discrepancies lead us to believe that this is not the complete answer. Even though it has not provided a solution for the problem, it has evolved a method of study which has provided us with a new perspective. The principle discrepancies in the curves were a preponderance of eyes approaching emmetropia in the actual curve as compared to the more gradual leveling off in the theoretical curve and an unexplained elongation of the myopic limb of the curve. These indicate the existence of certain factors which have not as yet been considered. The degenerative changes occurring in myopic eyes point to some possible pathological process in many cases in addition to the normal physiological variation. The fact that at least 50 per cent of myopic eyes change more rapidly and to a larger degree during the period of growth indicates other factors which might be involved. At this time, it appears that a division of myopia into two large classes, one a physiologic variant and the other a pathologic process, is logical. Myopia is rarely congenital. The normal condition at birth is a variable amount of hyperopia which becomes gradually reduced during the period of growth. Myopia develops in youth and usually remains nearly stationary after growth is attained, except for the progressive or malignant type which degenerates more or less rapidly throughout life. Myopia is undoubtedly an inherited characteristic; the factor of heritage being the one outstanding etiologic factor which is undisputed. The definite predilection noted in certain racial and familial groups may be explained on a basis of heredity. The uneven distribution in various strata of society has been ascribed to overuse of the eyes for close work since it seems to occur more frequently in intellectual groups or trades such as printing, tailoring, etc., where close concentration is required. It has been suggested that an endocrine disturbance may be an etiological factor since the onset and progress of myopia are so much more marked in adolescence.

The clinical classification of myopia by Prangen is quite useful from a practical standpoint. His two main divisions are *Developmental Myopia* and *Malignant Myopia.* Under developmental are listed *Curvature Myopia* which he finds in 75 per cent of all cases and *Axial Myopia* which he finds in 20 per cent. The remaining five per cent comprising the malignant type are further subdivided into those of moderate and those of severe degree.

The multiplicity of ideas regarding the origin and development of myopia have led to innumerable therapeutic attempts. As a result of the mechanistic viewpoint of the 19th century, a system of ocular hygiene was developed which has been and is still widely used. This system involved the use of proper lighting in schools, correct posture when using eyes, large, distinct printing, regulation of the distance of near work from the eyes, restriction of the use of the eyes, and general hygienic measures relating to diet, outdoor exercise, rest, etc. Leading ophthalmologists in many countries have attempted to collect and evaluate statistics covering the last 50 years during which these measures have been in general use in the schools in order to estimate the effectiveness of these measures. The research of Segal in Munich, Ask and Nordgren in Sweden, Matos in Portugal, Heinonen in Finland and Holm in Denmark failed to furnish any conclusive evidence that the incidence of myopia had been influenced in any way. However, most men agree with Prangen that it is difficult to discount entirely the effects of excessive near work under poor hygienic conditions. Prolonged observation of individual cases gives one the impression that myopia is more apt to progress under these conditions.

Duane in 1902 stated that a full correction of the refractive error would do more to prevent the progress of myopia than any other procedure and the concensus of opinion is still in agreement with this observation. The refractive treatment of myopia has varied from the use of plus lenses to overcorrection with minus lenses. In earlier days it was thought that the use of the accomodative mechanism which becomes necessary when minus lenses are worn, elevated the intraocular tension and produced a further elongation of the globe. For this reason no glasses were prescribed or in some cases plus lenses were used to secure further relaxation of the accommodation. Cycloplegics were used to keep the accommodation inactive for long periods of time. Atropine is still used for this purpose or in just one eye to eliminate convergence. Pressure from the extra-

ocular muscles in converging was supposed to elongate the globe and increase the myopia. This theory also lead to the use of base out prisms to decrease the necessity for convergence. Tenotomies of the lateral muscles were also used to decrease the amount of pressure which they exerted on the globe.

The supposed influence of increased intraocular pressure led to the use of iridectomies in myopia in order to maintain a lower level of pressure. The use of eserine and pilocarpine for the same reason had considerable popularity for a time. At the present time the use of bifocals to lessen the accommodation is advocated in some circles.

The possible role of the endocrine glands has led to the use of powdered extract of adrenal glands, and the use of thyroid. It is felt that the use of thyroid is beneficial where a lowered metabolism is demonstrated, and it has been noted that a hypothyroidism is frequently associated with myopia. Many authorities have advocated the instillation of epinephrine in the conjunctival sac and it is probably worth a trial. The administration of calcium with parathyroid extract or Vitamin D has not been proved effective in the treatment of myopia.

The refractive treatment of myopia requires the careful estimation of the refractive error under cycloplegia. The subjective estimation of the refractive error can be quite variable. The marked tendency of myopes to accommodate frequently results in an overcorrection, and conversely, an unscrupulous refractionist may undercorrect without offending the patient since almost any glass is an improvement. In the presence of an associated astigmatic error, the subjective refraction becomes even more difficult to perform accurately. The refraction should be checked two or three times a year during the period of growth in order to keep the eyes accurately corrected at all times.

A study of the muscle equilibrium is felt by many to be of especial importance in myopes. This should include a recording of the phoria for distance and near, with and without correction, as well as prism convergence and divergence for distance and near. It is felt that any deviation of these measurements from normal limits may be used in modifying the prescription as indicated. While we are all familiar with the use of plus lenses in the treatment of accommodative, convergent squint, the modification of myopic corrections by muscle imbalances is not so widely appreciated. Dr. Costenbader of Washington, D. C., states that he sometimes overcorrects myopia as much as two diopters in cases of divergence excess and finds this overcorrection very effective in stimulating convergence at a distance. The normal exercise of a balanced accommodation and convergence apparently tends to produce the most favorable condition for healthy eyes.

The recent report from the Wilmer Institute on the results obtained in the treatment of myopia by visual training has helped to clarify the situation in regard to various therapeutic regimen which are quite popular at present. Although most of these methods have been developed by optometrists, we should know enough about them to evaluate their effectiveness and intelligently advise our patients. This has been the first controlled study on a large scale of the most effective methods devised to date and used by a group of optometrists under the direction of Dr. Skeffington.

In this group of 103 myopic individuals, approximately 60 per cent showed some increase in visual acuity, which at first glance appears rather remarkable. Careful cycloplegic refraction before and following the three month period of training failed to show any actual improvement in the myopic refractive error and the improvement in visual acuity was not consistently maintained on reexamination three months later. Although the technic of training was not described, it probably involved elimination of glasses and training in recognition with the tachistoscope, an instrument devised for teaching recognition in the military services. This is a modified projector which exposes images for definite, regulated periods of time, gradually decreasing the length of exposure until recognition becomes instantaneous. Remarkable facility in recognition of images can be developed with this instrument and the improvement in visual acuity can be attributed to education in the correct interpretation of blurred visual images. The considerable variation in visual acuity of persons with identical refractive error is attributed to personal factors of interest, intelligence, etc., since it can easily be demonstrated that a small amount of effort and education will improve visual acuity one or two lines on the chart. However, most of the patients showed a beneficial psychological reaction, even if no improvement in visual acuity could be demonstrated and it must be admitted that any visual education that assists an individual to better utilization of his visual equip-

ment has some value even if the basic refractive error is unchanged. It is doubtful if the small percentage of improved acuity in certain cases justifies the time and effort expended and the use of these exercises as routine treatment would not be recommnded.

Too much emphasis cannot be placed on the importance of the general hygienic management of myopic patients. Insistence on a certain amount of exercise in the open air, a healthful diet, elimination of focal infections and treatment of chronic or debilitating diseases are of utmost importance in proper management.

If this brief review of myopia refreshes our memories and stimulates our interest anew it will have served its purpose. We have noted that the elongated globe theory is not considered tenable in the light of present knowledge, but that approximately 95 per cent of myopes represent normal physiological variations, or an insufficient amount of the normal hyperopic reserve which is usually present at birth. Etiologic factors of importance are heredity, age, race and sex. The most important therapeutic measure is fully correcting lenses, constantly worn, and rechecked at frequent intervals in order to keep the myopia fully corrected. The treatment of progressive, malignant myopia is an individual problem, involving restriction of unnecessary near work, hygienic and dietary measures, treatment of systemic conditions, local use of epinephrine drops, calcium, parathyroid, Vitamin D and measures to prevent excessive convergence.

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AN EPIDEMIOLOGICAL STUDY OF PINWORMS IN PATIENTS AT OKLAHOMA HOSPITAL FOR CRIPPLED CHILDREN*

GLADYS C. SMITH AND DARWIN L. RICHARDSON

Grandma can be right when she says Johnny is wormy. For when it comes to pinworms, we, in 1946, can reiterate what Leuckart said seventy years ago[1], that "there may be only a few who do not harbor them at one time or another."

Enterobius vermicularis, also known as *Oxyuris* and thread or pinworm, is a small, round, white worm, 2 to 13 mm. long. Since it is not harbored by experimental animals, the life cycle is not completely proved. In man the adults live in the lower intestinal tract with their heads attached to the mucosa. After the female becomes gravid, she seldom lays eggs in the bowel, but migrates through the anal opening, sometimes during waking hours, but often while the host is asleep. On reaching the outside air, her uterus explodes, and if the surface is moist she may crawl about, leaving a track of ten thousand to twenty-five thousand eggs on the perianal and surrounding regions. These eggs are scattered by contamination, and some think by particles of dust in the air, to clothing, bed linen, furniture, bathroom and light fixtures, and may finally reach the mouth of someone[3]. Depending on humidity and temperature, a large percentage of these eggs (50 to 90 per cent by different investigators) are not viable. They die most quickly in a warm, dry place[2]. When they are swallowed and reach the small intestine, the larvae emerge from the shell and migrate to the large bowel. Fifteen to twenty-eight days[3] after the eggs are ingested, females migrate out to begin another cycle.

Stool examination to find the eggs is obsolete since Cram[4] showed only one out of ten positives are found in this way. In the

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last nine years wide use has been made of the National Institute of Health or NIH swab. It consists of a small square of cellophane wrapped on the end of a glass rod, which is stroked over the perianal folds to pick up eggs. Another effective and popular method has been using ordinary Scotch tape to pick up the material; the tape may be suspended from forceps, or held over the end of a tongue blade, or over the closed end of a test tube. Petersen and Fahey[5] found just pressing a microscopic slide directly around the anal region to be satisfactory.

The largest pinworm survey and study has been made by Cram[3] and her associates under the National Institute of Health, U. S. Public Health Service, between 1937 and 1939. This study covered varied groups of adults as well as children in Washington, D. C., and included patients in private practice. It showed 41.5 per cent of 2,895 white people and 12.9 per cent of 1,099 negroes positive. Other surveys in this and several foreign countries have indicated 30 to 50 per cent infection as a rule. The colored race has a lower incidence, and institutionalized groups seem to have a higher rate. In six children's homes in New Orleans 74.3 per cent had enterobiasis[1]. These worms were found in about three-fourths of the chronic mental patients at Minnesota State Hospital[5]. Hospitalized children have shown less infection, 19 per cent at the Children's Hospital in Boston[6], and 16.3 per cent at the Indiana University Medical Center[7].

SURVEY RESULTS

We have made a limited survey of 117 children who were patients in the Oklahoma Hospital for Crippled Children, Oklahoma City. They are from numerous counties of the state. Between seven and eight in the morning, before the children had their baths, specimens were collected on three days, usually successive ones. A piece of Scotch tape was held over the end of a tongue blade with the sticky side out. This was sponged over the perianal region and perineal folds and then stuck with the stick side down to a glass slide. At our convenience the slides were examined. After raising the Scotch tape, a few drops of mineral oil were put on the slide, and the tape replaced, then, a cover glass or slide, cut to the size of 12x25 mm., was laid on top the tape with more mineral oil underneath it. All the area under this cover glass was examined microscopically for the flat sided pinworm egg, which has a shell and usually contains an embryo.

TABLE I

SEX	TOTAL CHILDREN	PER CENT POSITIVE
Male	48	18.7
Female	69	43.4
Total	117	33.3

One-third of the 117 children examined had pinworms. Table I shows that we found more in girls than boys. We do not consider this of significance because other surveys have given varied findings in comparing the two sexes.

TABLE II

AGE IN YEARS	TOTAL CHILDREN	PER CENT POSITIVE
1-5	26	26.9
6-11	44	47.8
12-17	37	29.7
Over 18	10	0.0
Total	117	33.3

Table II shows the difference found in age groups. Enterobiasis in our preschool children, 26.9 per cent, was less than in the 6 to 11 age group, in which 47.8 per cent were positive. The older group, 12 to 17 years of age, with 29.7 per cent positive, shows a trend toward the lower incidence found in adults. None of our ten subjects over 18 were found to have pinworms. These figures fall in line with those of Cram[11] and her associates, in which 51 per cent were positive in the school age, 22 per cent in adults, and 35 per cent in the preschool age. Nursery school groups have been known to be as heavily infected as older children, but it can be easily understood that unless there is a family infection the preschool child does not have the varied contacts and opportunities to be exposed to the infection and, also, may be more closely supervised about hand washing and personal hygiene.

Our third table shows that children staying in the hospital a month or longer had a decreased infection rate. If the patient had been in Oklahoma Hospital for Crippled Children 31 to 60 days, he was only half as likely to have enterobiasis as those spending less time

in this institution. In slides taken over 60 days after admission, only 7.2 per cent were positive. The hospital surveys in general have shown a lower incidence than found in school groups, or in children at camps, clinics, and other places. However, we have not found another tabulation bringing out this inverse ratio of infection with the length of hospitalization. Off hand, one would be inclined to think this is due to more frequent change of night clothes, bed linens, bathing, and general cleanliness. However, one is reminded of the $700 which was spent on a six week cleaning up campaign to reduce enterobiasis in a children's home in New Orleans with the result of more positives than before[10]. E. C. Jones[8] suggests that frequent enemas in the hospital may be part of the explanation. Hospitals usually are well heated, and it is recalled that the eggs become nonviable more quickly in a warm, dry atmosphere. A number of those remaining in the hospital for long periods of time have been confined to their own bed, but are not entirely free from contamination by other children who are up, nor by articles in the wards. Enterobiasis has not been studied from the food-handling standpoint, but it is possible that the food in hospitals is handled in a more sanitary manner. Also, it may be that some widely used drug or other disease may interrupt the life cycle.

TABLE III

DAYS IN HOSPITAL	TOTAL CHILDREN	PER CENT POSITIVE
0-30	64	48.4
31-60	25	24.0
Over 60	28	7.2

Our study, like others, showed no difference of infection with economic level. The income per month of the wage earner of the child's family was used as a measure of economic level. Sewitz[1] found no correlation between the number infected and the money spent on maintenance or food in the New Orleans children's homes.

Our rural group was not significantly different from the urban one. Eleven children from Oklahoma City, not a large enough group to be significant, showed 45.5 per cent infection — only slightly higher than the whole group.

If we had taken only the first slide on each individual, 80 per cent of our positives would have been discovered, and with two slides 89 per cent. We undoubtedly missed some by not taking more than three slides. Wright and Cram[9] found one NIH swab detected 72 per cent of the positives and seven swabs 99 per cent. If enterobiasis is suspected, certainly multiple slides should be negative before dismissing the impression. It is not rare for the vaginal swab to be positive when the perianal material is negative. Microscopic examination for eggs and seeing the worms are the ways of making a definite diagnosis. Apparently there is no eosinophilia, and symptoms usually are not present or are nonspecific.

Though often not impairing good health, various investigators believe pinworms may cause perianal itching and inflammation, abdominal pain and gastrointestinal disturbances, vaginal discharge in female children, restlessness, and occasionally allergic and other manifestations. Those who have compared patients before and after treatment believe there is some improvement shown by weight gain, lessening of dark circles under the eyes, and improved color, as well as relief from local symptoms when present.

SUMMARY

Enterobius vermicularis was found in one-third of 117 children hospitalized in Oklahoma Hospital for Crippled Children. This and other studies show it is a common infection. It increases in the younger school age group and decreases with the length of stay in the hospital.

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CLINICAL PATHOLOGIC CONFERENCE

The School of Medicine of the University of Oklahoma

Presented by the Departments of Pathology and Medicine

ROBERT H. BAYLEY, M.D. AND BELA HALPERT, M.D.

OKLAHOMA CITY, OKLAHOMA

DR. HALPERT: When a patient who enters the hospital in a desperate state dies shortly after admission, there is not much opportunity for the clinician to gather all the information and laboratory data necessary for an accurate clinical diagnosis. Such a state favors rather free speculation as to the nature of the disease. If a necropsy is performed however, speculation tends to be inhibited. This is not a forewarning to Doctor Bayley; it is merely to point out to all of you that since this patient died a short time after admission, there was not ample opportunity to gather various information which would be very useful in arriving at a correct clinical diagnosis.

Doctor Bayley did not attend this patient nor has he been informed of the necropsy findings. He will present and analyze the clinical data.

PROTOCOL

Patient: E. R., white female, age 38; admitted May 20, 1946; died May 20, 1946.

Chief Complaint: Precordial pain and weakness.

Present Illness: About two years before admission, the patient first began having pain in the left shoulder, precipitated by exertion. At the onset of the illness this pain was localized to the shoulder and was relieved by rest. During the past two years these attacks have become more frequent and more severe. For the past few months the pain has radiated down the left arm across the chest and at times into the neck. Recently, attacks of pain have occurred during bed rest. The patient has taken nitroglycerine tablets, 1/100 grain, but with only slight relief.

Past History: Noncontributory.

Family History: Noncontributory.

Physical Examination: At the time of admission, the patient was well developed and well nourished. She did not appear acutely ill. The lips were pale, but not cyanotic. The lung fields were clear throughout. The heart was not enlarged. The first aortic and first pulmonic heart sounds could not be heard. There was a soft blowing diastolic murmur heard best to the left of the sternum in the fourth interspace. Blood pressure was 110/64.

Laboratory Data: E.C.G. report: "Normal E.C.G. — heart in semivertical position."

Clinical Course: The patient was admitted and a history was taken. Routine orders were written. About 8:00 p. m. she complained of pain in the left shoulder for which she was given codeine, grains one-half. She obtained relief about 15 minutes later and went to sleep. At 10:45 p. m. she was heard to be gasping by the nurse who found her in extremis. She died ten minutes later.

CLINICAL DIAGNOSIS

DR. BAYLEY: The case is that of a white female, age 38, who died approximately twelve hours after admission to this hospital. Her chief complaint was of precordial pain and weakness. Heart pain in an individual under forty at once suggests two etiological factors. In previous years when our treatment for syphilis was not as effective as it is today, syphilis was one of the most common causes of heart pain in the third decade of life. Rheumatic fever is a common cause of heart disease in the second and third decade, but it is not common for chronic rheumatic heart disease to be accompanied by the syndrome of angina pectoris. Approximately thirty cases have been recorded in which patients with chronic rheumatic heart disease presented, in addition, angina pector-

is. The majority of these patients had high-grade mitral stenosis. Under these conditions the stroke volume output of the left ventricle is small so that the systolic pressure in the aorta is relatively low. The pressure gradient through the coronary tree is small so that coronary blood flow is diminished, particularly during systole. In this way a relative myocardial ischemia results. For those who believe that heart pain is a direct effect of myocardial ischemia, this explanation is satisfactory. Some years ago, Dr. Paul B. White had no difficulty in collecting one hundred cases of myocardial infarction in people under 30 years of age. The youngest case of which I am aware is that of a child three years old, reported from the Mayo Clinic. We must therefore consider in this case, the possibility of atherosclerosis of the coronary arteries with or without myocardial infarction. Rheumatic etiology is an unlikely possibility.

About two years before admission, this patient began to have pain in the left shoulder which was precipitated by exertion. At the onset of her illness this pain was localized to the shoulder and was relieved by rest. These are cardinal features of heart pain. During the past two years these attacks became more and more severe. For the past few months the pain was described as radiating down the left arm, across the chest and, at times, into the neck. Recently she had been having attacks of pain while lying in bed. This course of events, particularly the occurrence of pain during bed rest, has been correctly accepted by clinicians as an ominous sign. Neglecting age, atherosclerosis of the coronary arteries is the most common etiological factor behind this course of events. The patient had been using nitroglycerin tablets, grains 1/100, with but only slight relief. The use of nitroglycerin with relief of heart pain may be interpreted in two ways. It may be taken to indicate that nitroglycerin has relaxed spasm in the coronary arterial tree, improved coronary flow and thus relieved myocardial ischemia, and the resultant cardiac pain. If pain is a direct effect of *spasm* of the coronary arteries, this drug may relax the tension and relieve the pain directly and the ischemia incidentally. At the time of admission, the patient was well developed and well nourished. She did not appear acutely ill. Her lips were pale but not cyanotic. The lung fields were clear throughout. The heart was not enlarged. A normal cardiac size would be strong evidence against chronic rheumatic heart disease with high-grade mitral stenosis and a resulting syndrome of angina pectoris. The first aortic and first pulmonic heart sounds could not be heard. The definitely diminished first heart sound may be evidence of myocardial damage. There was a soft blowing diastolic murmur heard best in the sternum in the fourth intercostal space. That is the typical place for the diastolic murmur of aortic insufficiency. The blood pressure was 110/64. This diastolic pressure is a bit low and fits in with the diagnosis of aortic insufficiency. The peripheral-vascular signs of aortic insufficiency, carotid pulsation, pistol shot sound at the femorals, Corrigan's pulse, etc., are evidence of free aortic insufficiency where the valve leak is large. This patient probably had a low-grade aortic insufficiency. There are two common etiological factors which can produce this valve lesion: *rheumatic fever* and *syphilis*. It is often very difficult to decide which of these diseases is responsible in a given case. There is an important structural difference in the lesion which syphilis produces, a pure aortic insufficiency. Rheumatic aortic disease tends constantly toward aortic stenosis. A typical rheumatic aortic stenosis has a systolic, as well as a diastolic, murmur. However, the aortitis of which the syphilitic valve disease is a part, may produce a fusiform aneurysm of the ascending limb of the aorta, and the blood passing from a normal valve opening into the dilated aorta can give rise to a systolic murmur. To make the problem more difficult, rheumatic aortic insufficiency with an increased pulse pressure may produce dynamic dilatation of the aortic arch. In one such instance, a girl, seventeen, had free aortic insufficiency on the basis of four previous attacks of rheumatic fever and was presented at several medical clinics on the East Coast by Dr. William Osler because of a pulsating mass as big as a hen's egg, which protruded from the suprasternal notch and which produced a palpable systolic thrill. He repeatedly cautioned against the diagnosis of true aneurysm in this type of case. Necropsy two months later showed an aortic lumen too small to admit the index finger. This was an instance of dynamic dilatation of the aorta which, upon death, returned to its original size. In another instance, a young man with rheumatic aortic insufficiency had sufficient dynamic dilatation of the aorta so that the right margin of the ascending limb extended to the right midclavicular line and the left margin to the left quarter clavicular line. This dilatation completely subsided following two weeks bed rest, during which time

the diastolic pressure rose from 40 mm. to a normal of 80. We do not have a chest x-ray on this patient from which we could consider these details. When we can be sure that an element of stenosis is present at the aortic valve, we can be sure that the etiology is rheumatic disease with one exception. In people beyond sixty, calcific aortic disease results in stenosis which may not be accompanied by aortic insufficiency.

In luetic aortic valve disease, the average duration of life after aortic insufficiency becomes clinically evident is one and one-half years. These people may get along fairly well for several years until free aortic insufficiency develops. The heart then becomes greatly enlarged; the low diastolic pressure impairs coronary flow and congestive failure supervenes. The typical syndrome of angina pectoris is not common. They complain usually of a sense of substernal pressure which comes on with spells of paroxysmal nocturnal dyspnea. This form of so-called cardiac asthma is the direct result of transitory left ventricular failure and transitory pulmonary edema. No such picture is presented in this case.

The electrocardiogram was reported as normal. This curve was recorded while the patient was having pain. The electrocardiogram is an accurate measure of local ventricular ischemia, and those who believe that heart pain results from myocardial ischemia would have considerable difficulty in attempting an explanation here. We had better think of myocardial pain as caused by coronary arterial spasm. I know of two conditions in which tension may develop along the coronary arterial tree and be unassociated with the development of secondary myocardial ischemia: (1) with advanced atherosclerosis and calcification of the vessel in which contraction of its muscular wall cannot alter the size of the lumen, and (2) in which the vessel has already been occluded either by thrombosis or by closure of the coronary ostia from a luetic aortitis in which the process has been gradual and the myocardium now gets its blood supply by collateral channels. Under these conditions spasm of the vessel may occur and be accompanied by pain, but unattended by myocardial ischemia. Here are slides of two electrocardiograms. The first shows an upward displacement of the RST junction in unipolar leads in which the exploring electrode is superjacent to the ischemic region of the heart wall. This type of injury effect indicates that the intensity of the ischemia is greater at the epicardial than at the endocardial surface. In the second curve, there are striking downward displacements of the RST junction in the unipolar leads in which the exploring electrode is superjacent to the region of ischemia. This phenomenon indicates that the intensity of ischemia is greater at the endocardial than at the epicardial surface. In short, the electrocardiographic evidence of ischemia depends on the fact that the ischemia is local or that there is a difference in intensity of ischemia at the two surfaces, epicardial and endocardial. Modern electrocardiographic theory predicts that if ischemia is diffuse or of *uniform intensity throughout all regions of the ventricular muscle*, the form of the final ventricular deflections will be normal. Such might be the case here, in which the ostia of both coronaries have been gradually closed; if so, it will be the first case of this sort which I have seen.

There was a note on the chart that during one attack of pain, the heart was beating very fast, 140 per minute. It is possible that a mechanism disturbance such as paroxysmal ventricular tachycardia was present. The exact nature of death in this patient is most difficult to decide upon. Sudden death as a rule does not occur in chronic luetic aortitis. The usual picture is that of congestive heart failure. Perhaps the mechanism disturbance recurred and resulted in acute pulmonic edema. At the end, the patient was gasping for breath but did not complain of pain. In summing up, I believe that this patient had luetic aortitis. This diagnosis is based primarily on the presence of the aortic diastolic murmur. The age is typical for this lesion since, on the average, it occurs 15 years after acquiring the infection. The ostia of both coronaries may have been closed. When the mouth of one coronary is closed, local ischemia and electrocardiographic changes of one kind are apt to appear. When the mouth of the other coronary is closed, electrocardiographic changes of another kind usually result. Death might have been produced by an acute pulmonary edema following the onset of a mechanism disturbance. This is as far as we can go with our diagnosis with the information at hand.

ANATOMIC DIAGNOSIS

DR. HALPERT: In order to relieve the tension, I should like to state that Doctor Bayley's conclusion was verified at necropsy. The liver extended 6 cm. below the costal margin in the right midclavicular line and this enlargement was due to acute congestion. Es-

sentially all other findings were negative except for the changes in the heart and in the aorta. The lungs weighed 250 Gm. each and there was some evidence of chronic passive congestion, but little edema. The heart was not significantly enlarged; it measured 10 cm. from base to apex and 9 cm. across the base; it weighed 250 Gm. The apex was rounded, evidence of slight dilatation. The left ventricle was moderately thickened and trabeculae carneae somewhat flattened. Valve orifices were of the usual dimensions. The most striking changes involved the aorta and aortic valves. The cusps of the aortic valves were thickened, rolled, shortened and the commissures were slightly separated. In searching for the coronary orifices only one could be found and it was barely patent, approximately one millimeter in diameter. The coronary arteries proper were soft and there was but minimal atherosclerotic change. They were widely patent save in the region of origin. The bulb of the aorta was puckered, scarred and presented longitudinal ridges, the typical appearance of a syphilitic aortitis. These changes did not extend beyond the end of the arch.

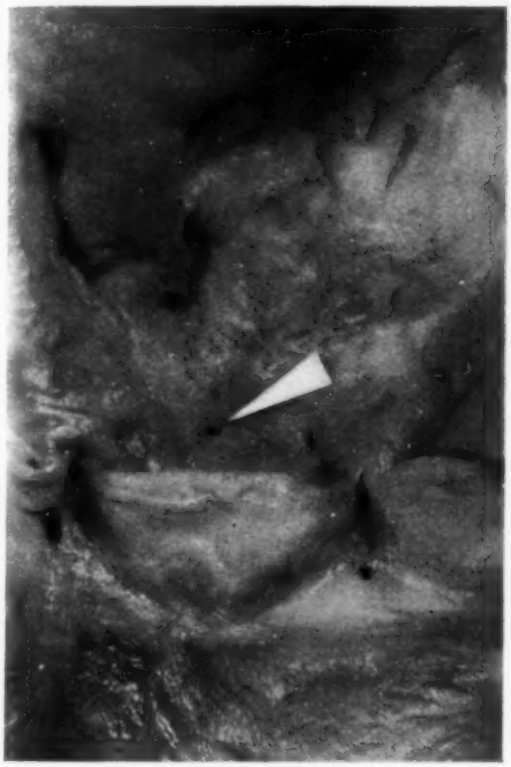


FIGURE 1.

The arrow points to the only coronary orfice which was evident at necropsy. Note the very marked narrowing. The aortic valve cusps exhibit thickening, rolling of their free margins and separation of their commissures.

The syphilitic aortitis and valvulitis, with the narrowing and occlusion of the coronary orifices certainly provide an anatomic basis for the clinical picture of angina pectoris. There were no E.C.G. changes and these can be absent under the conditions which Dr. Bayley mentioned, namely, gradual occlusion of *both* coronary orifices. Under these circumstances collateral circulation would supply blood through the otherwise intact coronary arteries. The aortic valves were incompetent to slight or moderate degree principally because of the shortening and thickening. Under these conditions dilatation of the aortic ring is not necessary for aortic insufficiency. In this case the aortic valve orifice measured 6 cm. in circumference. Several sections of the myocardium exhibited diffuse interstitial fibrosis, positive morphologic evidence in this case of a general myocardial ischemia. Thus the changes suspected clinically as the basis for signs and symptoms were verified at necropsy.

TETANUS TOXOID

Important advances were made in the prevention and treatment of disease during the war. One of the interesting advances was concerned with the use of tetanus toxoid in the Army. Ramon and his associates had demonstrated the possibility of immunization against tetanus in the nineteen thirties. In the late summer and fall of 1940 the Medical Department of the Army made repeated attempts to impress the War Department general staff of the value of tetanus toxoid and to introduce its use as a universal practice in the Army. These efforts were rebuffed by the War Department general staff because of the fear of adverse criticism from anti-vaccination groups if another immunization procedure was added to those already in use. (It is to be noted that in matters of health the Medical Department functions only in an advisory capacity to the general staff.) In the middle of 1941 the general staff reversed its position and authorized the immunization of all personnel in the Army of the United States with tetanus toxoid. Rarely has an immunization procedure been so effective, there being but three recorded cases of tetanus in the immunized personnel of the Army during the entire war. Tetanus developed in only one battle casualty.

President's Page

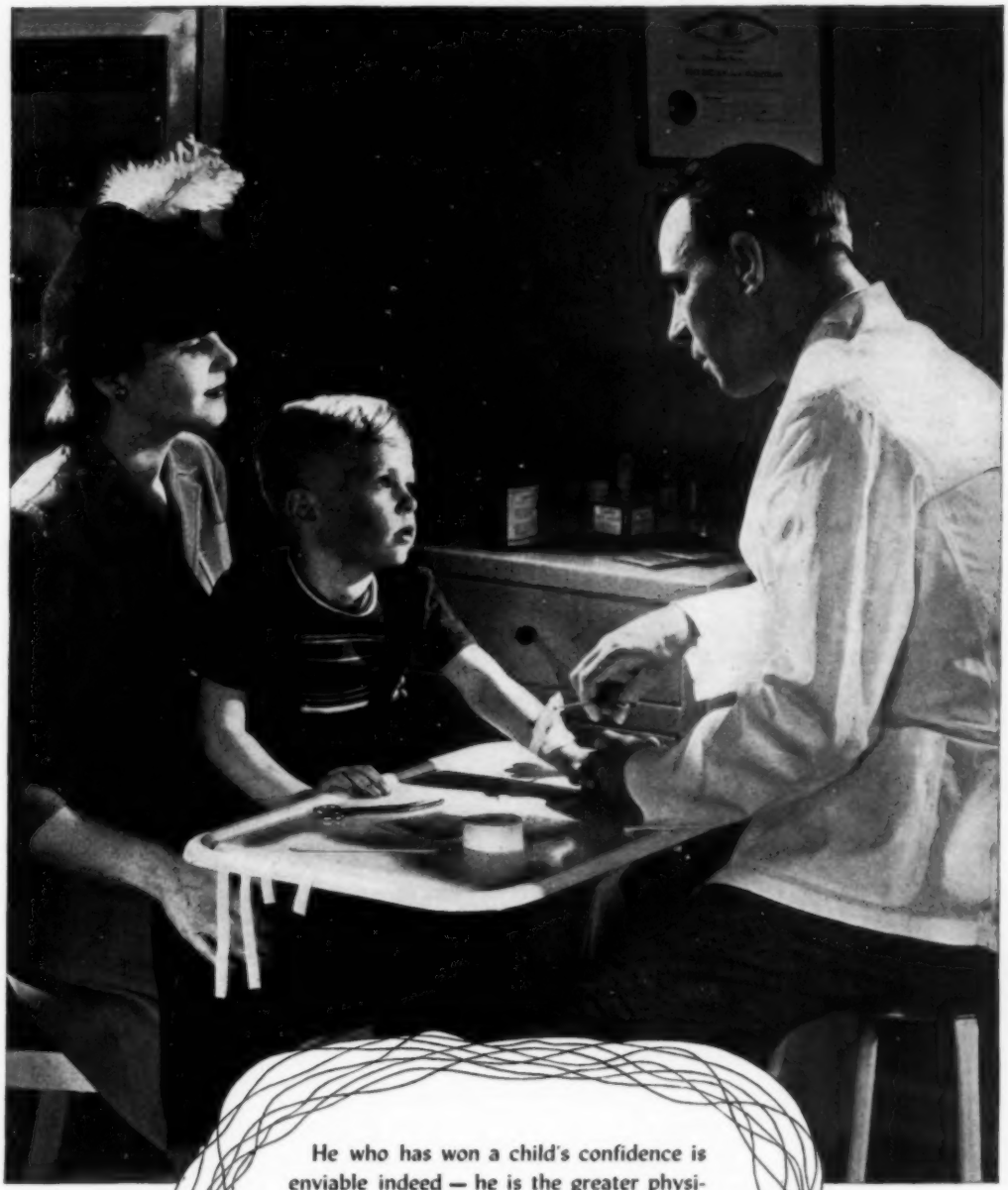
As this is being written the March of Dimes is on and it is my hope that everyone will make a liberal contribution to this most worthy cause. The victims of polio are from all strata of society and many of them from homes unable to pay for the necessary care and hospitalization so essential to their ultimate recovery.

The Congress and State Legislature are now in session, and it behooves each one of us to watch for legislation introduced and to consult our representatives in both bodies, State as well as National, so that they may be properly advised at all times on matters affecting public health to the end that the public may continue to enjoy the protection our present laws give them and these measures not be destroyed by selfish interests.

Watch for the date of your Councilor District meeting and try to attend as you will not want to miss this meeting. The program will be instructive and will be along lines you are vitally interested in.

L. C. Guyer Kendall

President.



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ASSOCIATION ACTIVITIES

ANNUAL MEETING, MAY 14-16

The Annual Meeting of the Oklahoma State Medical Association will be held May 14 through 16 at the Mayo Hotel in Tulsa, it has been announced by the Annual Meeting Committee. Plans are being rapidly completed to make the 1947 Session one of the most outstanding that has ever convened.

Outstanding Men To Be Guest Speakers

Dr. Maurice J. Searle, Chairman of the Scientific Work Committee, has announced that thus far four speakers invited to participate in the meeting have accepted, as follows: Dr. Nicholson J. Eastman, Obstetrician-in-Chief of the Johns Hopkins Hospital, Baltimore, Maryland, Obstetrics and Gynecology; Dr. Bedford Shelmire of Dallas, Texas, Dermatology; Dr. James W. Watts of Washington, D. C., Neurology and Psychiatry; Dr. Francis L. Lederer, Professor and Head of the Department of Otolaryngology, University of Illinois College of Medicine, Chicago, Illinois, Eye, Ear, Nose and Throat. Announcement will be made of others who will speak as soon as final acceptances are received.

Change in Scientific Sections

At a joint meeting of the Annual Meeting Committee, composed of the President, President-Elect, Secretary-Treasurer; the Scientific Work Committee; and officers of the Scientific Sections, it was proposed to reduce the number of sections into which the meeting is divided, predicated by the fact that there are not adequate physical facilities in Oklahoma City and Tulsa to house the meeting as it is now constituted. The Committees recommended that the number of sections be reduced from the present nine to a maximum of four and a minimum of two. Upon this recommendation ballots were mailed to all members of the House of Delegates and to date returns have been received from 95 of the 109 delegates. The vote was four to one in favor of reducing the number of sections to two, General Surgery and General Medicine, with sub-divisions as follows:

General Medicine	*General Surgery*
Internal Medicine	General Surgery
Neurology & Psychiatry	Eye, Ear, Nose & Throat
Pediatrics	Radiology
Radiology	Urology
Public Health	Orthopedics
Dermatology	Obstetrics & Gynecology

It was emphasized by the Committees that there will be at least ten guest speakers at the Annual Meeting, and each of the nine sections now existing will be represented. It was believed that reducing the number of sections would increase the benefits to the members of the Association in attendance.

HITS, RUNS AND ERRORS

Since the State Legislature is now convening and many other time consuming matters are at hand, "Hits, Runs and Errors" have been suspended from the Journal. Perhaps a leveling-off of activities will enable its reappearance at a later date.

TULSA COUNTY BOND ISSUE DEFEATED

On December 17, 1946, Tulsa County's hospital bond issue was defeated by a vote of five to three. Only one in 12 registered voters responded to the election. Major sponsors of the issue were the Tulsa County Medical Society, the Tulsa Tribune, and the Tulsa Chamber of Commerce.

OKLAHOMA DIVISION, AMERICAN CANCER SOCIETY COMPLETES MOST SUCCESSFUL YEAR IN 1946 — MOBILE UNIT FIRST OF ITS KIND IN NATION

The Oklahoma Division of the American Cancer Society inaugurated a most unique and gratifying medical service to the people of Oklahoma in the early part of 1946 by means of a mobile cancer detection clinic — the first of its kind in the nation. Fourty-four clinics were held in all sections of the state, selected in such a manner as to serve all counties. Of the 3,165 persons examined, 723 definite cases of cancer were discovered. Suspicious cases totaled 358, all of which are now under observation.

Survey Made of Physicians

The extreme effectiveness of the mobile clinic is best reflected by results of a recent survey made among physicians in counties visited by the unit. Survey showed that most local doctors' examination of private patients increased from 25 to 100 per cent as a result of the educational publicity given the clinics. The devised system of alphabetically rotating people specifying no family physician among members of the medical society was indicated to be entirely satisfactory by 79 per cent of the physicians replying to the survey. Eighty-two per cent approved of an annual repeat visit of the mobile clinic. A maximum number of centers for clinic visits was indicated most desirable by the doctors. The survey indicated that the findings of examining doctors were sufficiently clear and complete to be of value to the private physicians of the patients examined.

Results of the second portion of the survey, relative to a contemplated postgraduate course on cancer for physicians, indicated that the majority want this course to be patterned after the present plan of the Postgraduate Committee of the State Medical Association, which would bring the instruction to the physicians by establishing teaching centers in each of the ten councilor districts. An overwhelming majority of physicians replying to the survey favor a centrally located cancer hospital in Oklahoma and feel that it should be made available to both private and charity patients with definite affiliation with the Medical Research Center and the University of Oklahoma School of Medicine.

Other Important Activities of 1946

Activities of the 1946 program embraced the following major divisions: Education, medical service, research, organization and fund raising campaign. Among the media employed to educate the public concerning danger signals of cancer was an extensive program of newspaper advertisements, articles and editorials. More than 4,000 articles appeared in state papers during 1946, which established a national record. Liberal donations of radio time were secured from the radio stations of Oklahoma. Fifty thousand rural families received home study courses on the subject of cancer through the mail. Attractive and instructive exhibits were displayed at 45 county fairs and three state fairs with extensive distribution

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of literature. Approximately 700 cancer educational meetings were held during the year, having audiences ranging up to 2,000 people. Thirty-eight county medical societies held scientific meetings on cancer during the year.

Progress in organizational work included establishment and maintenance of permanent county organizations for directing activities. Ten district units are now functioning. Gratifying response by the public to the annual campaign for funds and the tireless efforts of county and community chairmen made possible the great success demonstrated in 1946 for the state cancer program.

1947 Program

The 1947 program of the Oklahoma Division embraces a three-fold objective: (1) Accomplish maximum benefit for the greatest number of people at minimum cost. (2) Lay a solid, ethical foundation upon which other future programs may be built. (3) Make the program flexible to the extent that changing circumstances and conditions may be met without disrupting any part of the over-all program.

The educational program now under way will be intensified during 1947 by use of all known means in an effort to publicize the fact that 30 to 50 per cent of all deaths resulting from cancer could be avoided by early diagnosis and treatment.

Research and experimentation will be substantially increased this year; visitation by the mobile detection clinic will include all sections of the state not previously served directly. Courses to inform the busy physicians of latest scientific methods of cancer diagnosis and treatment will be conducted during 1947.

THERE IS TO BE A SPECIAL TRAIN TO AMA CONVENTION!

Oklahoma physicians and their wives who go to the AMA Centennial Meeting at Atlantic City, June 9 to 13, will have the opportunity to make their trip via a special train co-sponsored by the Oklahoma and Kansas Medical Associations.

Details of arrangements are again being handled by the Rainbow Travel Agency of Oklahoma City, and Mr. Harry Kornbaum, manager. Many will remember Mr. Kornbaum's wonderfully arranged trip to the California meeting last year.

The special train with the very best accommodations is scheduled to depart from Oklahoma City and Tulsa on the evening of June 4 via the Frisco Railway, stopping by St. Louis to pick up the Kansas delegates enroute to Washington, D. C., where an interesting two-day stopover has been arranged for June 6 and 7.

The party arrives in Atlantic City Sunday evening, June 8. Hotel arrangements at the convention city are now being worked out and will be announced shortly. The AMA convention will be in session June 9 through 13.

Two Post-Convention Tours Planned

All members of the tour group will journey to New York City on the evening of June 13 for a three-day stay, at the conclusion of which the group will separate into two groups. Tour No. 1 will return directly from New York and arrive in Oklahoma on June 18. Those who desire may join Tour No. 2, which is an extensive trip up the Hudson River to Albany and Boston. After two days in Boston the train will go to Quebec for a two-day tour of that city and on to Montreal and Niagara Falls. From Niagara Falls to Buffalo, and an overnight cruise down Lake Erie (240 miles) to Detroit, Michigan. With a short and interesting stopover in Detroit, the party departs via Chicago and on to Kansas City and Oklahoma, arriving in Oklahoma City June 25. Tour No. 1 is of two weeks duration. Tour No. 2 to Quebec will require three weeks.

Important Details To Be Announced Soon

The cost of both of these all-expense trips will be announced soon, as well as many other interesting details of the post-convention tours. It is anticipated that literature giving complete information will be mailed to each member of the State Association during February.

PRESIDENT APPOINTS NEW COMMITTEE ON MENTAL HYGIENE

Dr. L. C. Kuyrkendall, President, recently announced the appointment of a new Advisory Committee on Mental Hygiene. The Committee held its initial session January 17, at which time Mr. Justin G. Reese, Field Representative of the National Committee for Mental Hygiene, of Chicago, Illinois, spoke on his recent survey of Oklahoma's mental institutions. Mr. Reese also made several suggestions as to how the new Committee could help in the Mental Hygiene Association's crusade to improve conditions in the State of Oklahoma.

The elected chairman of the Committee is Paul Gallaher, M.D., Shawnee. Members are: Hugh Galbraith, M.D., Oklahoma City; C. E. Leonard, M.D., Oklahoma City; Coyne Campbell, M.D., Oklahoma City; T. R. Turner, M.D., Tulsa; John Morey, M.D., Ada; Bernard Branley, M.D., Tulsa; W. W. Rucks, Jr., M.D., Oklahoma City; Bert Keltz, M.D., Oklahoma City; Harry Daniels, M.D., Oklahoma City; Jess Herrmann, M.D., Oklahoma City; C. W. Arrendell, M.D., Ponca City; J. B. Snow, M.D., Oklahoma City; Roy Emanuel, M.D., Chickasha; Maurice Searle, M.D., Tulsa; John Hackler, M.D., Oklahoma City; and John Shackleford, M.D., Oklahoma City.

DR. RITZHAUPT ELECTED HEAD OF AMERICAN POULTRYMEN

New head of the American Poultry Association for the next two years is Dr. Louis H. Ritzhaupt of Guthrie, who also serves as Logan County's State Senator. As head of the international organization of poultrymen, Dr. Ritzhaupt will preside at the association's annual convention in February. The association has its national headquarters in Davenport, Iowa, and includes all of the United States, Cuba, South America, Mexico, and islands of the sea. In the balloting for president Dr. Ritzhaupt carried all but three of the association's 12 districts. Dr. Ritzhaupt was also reelected president of the Oklahoma Poultry Federation last November, and has served as an officer of the state organization for the past 27 years.

ASK YOURSELF THIS QUESTION, DOCTOR

"If the Oklahoma State Medical Association is not giving you the things you think it should; if it is not progressive according to your views; if it is not meeting a profound need of the medical profession: what have you done about it, or what do you intend to do, besides paying your dues?" *Your* ideas and *your* criticisms for the improvement of the quality of service are needed — but they will be of little value if you remain silent!

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HAVE YOU HEARD

Two new fellows of the American College of Surgeons are *Drs. J. Moore Campbell* and *Robert B. Howard*, both of Oklahoma City, who were received into fellowship during the Clinical Congress at Cleveland, Ohio, on December 20, 1946. Formal induction into the organization was also held for *Dr. Lloyd H. McPike*, of Vinita, who was chosen for the honor in 1945, when travel restrictions postponed the formal exercises.

Dr. Bob McIntosh was appointed to the Tahlequah Hospital Board at a meeting held December 30, 1946, it was recently announced.

A graduate of the Oklahoma University School of Medicine, *Dr. N. F. Wynn*, who served as Chief of Surgery aboard a Navy hospital evacuation ship in the Pacific during the recent war, has returned to Oklahoma and is now installed in offices over the Broncho Theater in Edmond.

Dr. Mark D. Holcomb has been elected president of the Enid Exchange Club, and was ushered into office at formal installation ceremonies held January 6.

Dr. Roy Lee Fisher, formerly of Frederick, is now stationed with the Veterans Administration in Seattle, Washington.

Dr. Albert Ernest Hennings of Tuttle was recently elected State Representative from Grady County to fill the vacancy left by the death of C. D. Van Dyke.

The new wing of the University Hospital appropriated by the 1945 Legislature has been started. It will extend along the east side of the present hospital building.

Dr. D. H. Miller, manager of the Muskogee Veterans Hospital, recently completed a two-weeks' postgraduate course in medical practices at the University of Nebraska School of Medicine in Omaha. Acting manager for the hospital during his absence was *Dr. Emmett E. Boyd*, clinical director.

Recently returned to civilian practice is *Dr. William Best Thompson*, who has established offices in the Wiley Building, Walters, after serving as a Medical Corps captain in the Army. While in the service, Dr. Thompson was commended for meritorious service and outstanding work in an exceedingly difficult assignment at Camp Polk, La. He served as ward officer and consultant in general medicine and ophthalmology and also instructed in the Army Nurses Training Center at Ft. Louis, Wash.

Dr. Charles Stephen Stotts has returned to Fairfax from Caney, Kansas. Dr. Stotts previously had practiced in Fairfax prior to entering military service.

Dr. Frank Veroni, who came from Canada to Jay six years ago, is now returning to Toronto, Canada, to practice medicine there.

A new hospital is going up in Idabel, construction having been recently begun by *Dr. William H. McBrayer*.

NEWS

MEDICAL SERVICE SOCIETY ORGANIZED

A Medical Service Society has recently been organized in Oklahoma City. The purpose of the organization, composed of medical service representatives, is to bring about a closer cooperation in presenting pharmaceutical preparations to the medical profession in a manner that will be profitable to both the physicians and medical service representatives. Twenty-four pharmaceutical houses are represented and printed membership lists have been furnished the physicians in Oklahoma City.

Chapters have been previously established in San Antonio, Houston, Amarillo, Memphis, Wichita Falls, Little Rock, Tyler and Denver. The organization, which had its inception in Dallas in 1944, is attempting to establish chapters in all principle cities in the United States. At the present time plans are being made to organize a Tulsa chapter.

The second national convention will be held in Oklahoma City in March, 1947.

FELLOWSHIPS IN HEALTH EDUCATION TO BE OFFERED IN 1947

Fellowships leading to a Master's Degree in Public Health in the field of Health Education are being offered to any qualified United States citizen between the ages of 22 and 40, according to a statement released recently by the United States Public Health Service, Federal Security Agency. Tuition, travel expenses for field training and a stipend of $100 a month will be provided out of funds furnished by the National Foundation for Infantile Paralysis.

Candidates must hold a bachelor's degree from a recognized college or university and must be able to meet the entrance requirements of the accredited school of public health of their choice. In addition to the degree, courses in the biological sciences, sociology, and education may be required. Training in public speaking, journalism, psychology, and work in public health or a related field are considered desirable qualifications.

The year's training, which begins with the 1947 fall term, consists of eight or nine months academic work including: public health administration, epidemiology, public health and school health education, problems in health education community organization, and information techniques, and three months of supervised field experience in community health education activities.

Application blanks may be obtained by writing the Surgeon General, United States Public Health Service, Washington 25, D. C., and must be filed prior to March 15, 1947.

Veterans are encouraged to apply and will be paid the difference between their subsistence allowance under the G. I. Bill of Rights and the monthly stipend of $100. Employees of local and state health departments are not eligible since federal grants in-aid are already available for such training purposes.

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MEDICAL SCHOOL

CALENDAR — FEBRUARY, 1947

SURGICAL PATHOLOGIC CONFERENCES — Each Tuesday 12:00 Noon to 1:00 P.M.

MEDICAL CONFERENCES — Each Wednesday, 9:00 A.M. to 10:00 A.M.

CLINICAL PATHOLOGIC CONFERENCES — Each Thursday 12:00 Noon to 1:00 P.M.

TUMOR CLINICS — First and Third Tuesdays (February 4 and 18) 8:00 A.M. to 9:00 A.M.

UROLOGIC-PATHOLOGIC CONFERENCE — Second Tuesday (February 11) 8:00 A.M. to 9:00 A.M.

MONTHLY STAFF MEETING — Second Friday (February 14) Dinner, 6:15 P.M.

RADIOLOGIC CONFERENCE — Fourth Monday (February 24) 6:45 P.M. to 7:30 P.M.

Dr. Homer F. Marsh of the Bacteriology Department attended the International Hematology and Rh Conference at Dallas on November 15 and 16 and the Second Mexican Blood Transfusion Congress at Mexico City from November 23 to 28.

The meetings were highly interesting in that for the first time since the Rh blood antigens were discovered in 1939, practically all the men from the United States, Canada, England, and Mexico who have pioneered in these investigations were able to meet to discuss their problems. Although the men at the meetings constituted no official body, the meetings were concluded by drawing up several resolutions concerning the Rh antigens. Among these was a proposal to establish at least two centers in the United States in which serum for Rh testing would be processed and standardized. A resolution to consider the adoption of the Fisher-Race system of nomenclature of Rh antigens was also set out. Discussion as to the type of antiserum to use in Rh testing and the extent of such testing in routine hospital work clarified several points at issue so that definite plans could be formulated.

Among other highlights of the meetings was a demonstration of the technics for Rh testing conducted by the men themselves who had devised these tests.

Dr. and Mrs. Robert Dennis announce the arrival of a baby boy, David Harland, December 21. Dr. Dennis is serving a Residency at Wesley Hospital.

John Glismann (Med '45), was a recent vistor at this school. Dr. Glismann has accepted a position as medical missionary to China under the sponsorship of the Christian Church upon completion of his internship.

Alumni present at the University Hospital Staff meeting, January 10, were John Carson (Med '36), of Shawnee; Frank Keen (Med '32), Shawnee; C. E. Cooke, Jr. (Med '42), Weleetka; Carl Bailey (Med '33), and Fitten Hohl (Med '44) of Stroud.

James K. DeVore was named winner of the Oklahoma Memorial Association Annual Medical Scholarship, which provides for postgraduate medical study. DeVore qualified for the scholarship by having attained the highest academic standing in his class during the four years of medical curriculum. James' parents, Dr. and Mrs. Harry S. DeVore of Fayette, Missouri, attended the presentation at the Oklahoma Hall of Fame banquet November 15.

OBITUARIES

Wendell McLean Long, M.D.
1899-1946

Wendell McLean Long, M.D., of Oklahoma City died at St. Anthony Hospital on December 27.

Dr. Long attended the University of Oklahoma and Harvard and did graduate work in Europe. He had been attending gynecologist at St. Anthony since 1929. From 1929 to 1931 he was an instructor in gynecology at the University of Oklahoma School of Medicine. He was the son of the late Dr. Leroy Long, who had been dean of the Medical School.

Dr. Long's outstanding civic and medical service placed him in Who's Who in America. He was a member of St. Luke's Methodist Church and the Masonic Lodge, in addition to numerous social and medical organizations.

He is survived by his wife and two children, Lyda and Wendell, and a brother, Dr. Leroy D. Long.

Richard Bland Ford, M.D.
1900-1946

Richard Bland Ford, M.D., died in his home on November 30. He had practiced formerly in Holdenville and Tulsa, having moved recently to Corpus Christi, Texas.

Dr. Ford was born April 8, 1900, at Monroe, Oklahoma. After receiving his B.S. and M.D. degrees from the University of Oklahoma he did graduate work in Vienna, Austria. He was a veteran of both world wars.

Surviving Dr. Ford are his wife, his mother, Mrs. J. B. Ford, a brother, Jo Ford, and a sister, Betty Ford.

Francis Marion Edwards, M.D.
1874-1946

Francis Marion Edwards, M.D., of Ringling died December 30 at the Hardy Sanitarium in Ardmore.

Dr. Edwards suffered a cerebral hemorrhage on December 23. Born in West Plains, Missouri, in 1874, Dr. Edwards attended medical school at the Washington University in St. Louis and did postgraduate work at the University of California and Johns Hopkins in Baltimore. He had practiced medicine in Ringling since 1915.

Survivors include a daughter, Mrs. Wilma Baker and a grandson, Francis Edward Baker, of Ringling.

John Elmer Hughes, M.D.
1879-1947

John Elmer Hughes, M.D., of Shawnee, a charter member of the Pottawatomie County Medical Society, died January 15 while on a fishing trip in Acapulco, Mexico, following a heart attack.

Dr. Hughes established his practice in Shawnee in 1906 and was a co-founder of the A. C. H. Hospital and Clinic. He graduated from Northwestern University Medical School in Chicago. Prior to the war Dr. Hughes retired but resumed an active practice when his son, Dr. Horton Hughes, entered the service.

Shawnee's most widely traveled citizen, he had hunted big game in Africa, Asia, Mexico, Alaska, and traveled in Europe and South America and in recent years had taken an interest in archeological work in New Mexico and Arizona.

Survivors in addition to his son include his wife, a daughter, Mrs. James D'Ambrosio, Chicago, and three grandsons.

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BOOK REVIEWS

HARVEY CUSHING: A BIOGRAPHY. John F. Fulton. Springfield, Chas. C. Thomas: 1946. 718 pages. $5.00.

This charming biography of Harvey Cushing by John Fulton is much like Cushing's famous two volume biography of Osler. While both Cushing and Fulton deserve great credit for monumental tasks well performed, the observant reader must be impressed with the fact that Osler and Cushing, through their letters, diaries, notes, and published writings, left ample material for these fascinating stories. But in both instances the selection of material, the editing and bridging the gaps posed an arduous undertaking, gracefully accomplished through the "labor of love." Cushing's *Osler* and Fulton's *Cushing* should be required reading for all undergraduate students of medicine. They need the inspiration and the vision which must come through intimate acquaintance with these two great physicians representing both medicine and surgery. Fortunately the reading of Fulton's *Cushing* will stimulate interest in Cushing's life of Osler.

The biographer's knowledge of medical history highlights Cushing's sustained interest in the growth of medical knowledge and artfully correlates the past with the present, thus adding authenticated accomplishments to history in the making. The story of Cushing's career under the creative, eccentric Halsted and, in his own right, the development of neurosurgery in this country and setting standards to be followed throughout the world occasions a just pride in these two outstanding makers of history. No young doctor can afford not to sharpen his ambition upon the whetstone of the Cushing career as presented in this remarkable volume. No middle-aged doctor can afford to miss its stimulating influence and its hopeful note through unfailing effort. No old doctor should be denied the pride of profession and country which shines through pages of this fascinating book. No one can read this biography without being comfronted by the great man's faults and eccentricities. They have been freely and frankly presented by the biographer.

To sit in one's library and experience the unfolding of a great man's career and enjoy the companionship of all the distinguished personalities who come into his life as the story unfolds in a coveted privilege. The reviewer recommends Fulton's *Cushing* to every medical student, to every physician in every field of practice.—Lewis J. Moorman, M.D.

DIABETIC CARE IN PICTURES. Stern & Rosenthal. Philadelphia: J. B. Lippincott Company. 143 Pages. Price $2.00.

The book consists of 143 pages of information concerning the treatment of diabetes intended primarily for the patient. It is an attempt to simplify and clarify principles of diabetic care. The first half of the book deals primarily with diet and consists largely of picture sheets indicating the number of grams and average servings of carbohydrate, protein and fat exchanges, as well as similar representations with reference to mineral and vitamin contents of various foods. There are good height-weight tables and tables showing the daily requirements of the body. The discussion with reference to important features of the diet is clear, concise and well organized.

The second half of the book clearly pictures the various kinds and strengths of insulin and contains many excellent photographs of the technique of syringe sterilization and insulin administration. There is a full picture description of the methods of testing urine for sugar, acetone and diacetic acid. In the last portion of the book dealing with personal hygiene and special care of certain parts of the body there are especially good pictures of the care of the feet and valuable exercises commonly used.

The authors have had years of experience in the education of diabetic patients in the Boston Dispensary. The book is of great value to physicians, nurses, and dietitians who are frequently instructing diabetic patients. To selected patients of reasonable intellectual level the book will be of aid, but in the reviewer's opinion the section on diet and the multitude of pictures would be confusing to many of the diabetics who unfortunately are not of an intellectual level to fully comprehend it. This group of patients does not understand carbohydrate, protein, fat, mineral and vitamin exchanges as well as simple substitutions that may be made for a simple diet that is presented to them.—Bert F. Keltz, M.D.

VICTORY OVER PAIN. Victor Robinson, M.D. New York: Henry Schuman. 321 pages. Price $3.50.

This delightful account of the most moving story in the history of mankind is artfully presented by Victor Robinson, experienced medical historian. The author's style is so lucid and his story so compelling, the reader through sheer force of interest clings to the book while attempting to negotiate all interruptions.

From the earliest efforts to control pain in the threshold of discovery, the reader follows the developments with mounting anticipation. Then the slowly burning candle flames into glorious illumination as the efficacy of ether anesthesia is revealed. In this interesting drama the author introduces the leading characters with their respective roles. Moving across the stage we see Crawford W. Long, Horace Wells, Charles Thomas Jackson, and W. T. G. Morton. The public demonstration at the Massachusetts General Hospital by Morton and the sad controversy are graphically staged. The light traveled with its natural rapidity until all Europe was illuminated and the world had achieved "victory over pain".

Again the author lifts the curtain to reveal the preparation of chloric ether (chloroform) by Samuel Guthrie of Sacketts Harbour; his communication with Benjamin Silleman of Yale University; and Silleman's suggestion that this "sweet whiskey" might be of use in medicine. Though on the verge of discovering the anesthetic virtues of chloroform through its accidental effects upon his own child, Guthrie failed in this respect and it became the privilege of Sir James Y. Simpson to make this demonstration.

The author presents the development of local anesthesia and discusses the methods and the tools of modern anesthesia. His wide knowledge and his references to contemporary history give the book an added value. Every American physician should own and read this delightful story.—Lewis J. Moorman, M.D.

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MEDICAL ABSTRACTS

TALC GRANULOMA. A. L. Litchtman, J. R. McDonald, C. F. Dixon, and F. C. Mann. Surgery, Gynecology and Obstetrics. Vol. 83, No. 4, 1946.

This paper includes, under this title, other irritants than talc, e.g., various lubricating jellies, dry gauze, lycopodium power, etc., which may produce granulomas and adhesions when used in an operative wound. Experimentally, a series of operations on dogs is reported where granulomata or persistent fistulae occurred if the wound was seeded with talc or small cotton lint fibers from dry gauze. Microscopically, the talc lesions can best be discovered when palonized light is used. Clinically, cases of foreign body granulomata are reported which were confused with tuberculosis, cancer, etc., occurring in the peritoneum, cervix, rectum, scars, sinus tracts, gall bladder, gastro enteric stoma, etc., in which the diagnosis was possible only by examination of a biopsy specimen using palonized light.

It is not enough to wash the talc off of gloves used by the operating team. Over 22 per cent of the gloves used in surgery are perforated during operation, thus allowing talc seeding over a larger area.

Use of potassium bitartrate on gloves is suggested, as is the discontinuance of the use of dry gauze, talc, iodoform, petrolatum, and lubricating oil on instruments.

COMMENT: This article should be read, not only by surgeons, but by the nurses who prepare the gloves, gauze, and instruments used. No matter how meticulously careful the operator may be, technically he may get a poor result because he carelessly seeded the wound with small particles of insoluble foreign matter.—G.P.

IRRADIATION FOR THE ELIMINATION OF NASOPHARYNGEAL LYMPHOID TISSUE. Donald D. Proctor. Archives of Otolaryngology. Volume 43, pp. 473-480. May, 1946.

Infection of nasopharyngeal lymphoid tissue has many sequelae such as recurrent common cold, deafness due to malfunctioning Eustachian tubes, otitis media, bronchial asthma, etc. To eliminate nasopharyngeal infection an irradiation treatment is essential. Surgery does not give satisfactory results; first, the lymphoid tissue cannot be completely removed; second, recurrences are quite frequent. On the other hand, lymphoid tissue is very sensitive to radiation, so that small doses may be sufficient to bring about satisfactory results.

The irradiation is best made with beta and gamma rays, and these can be obtained from the use of tubes containing radium B or radium C. About 75 per cent of the beta rays given by a Monel metal tubular chamber are absorbed in the first 3 mm. of tissue, while 6-7 per cent of the rays will pass as deep as 20 mm of tissue.

After moderate irradiation the nasopharyngeal lymphoid tissues recover in a period of 3-4 weeks. Therefore, irradiation should be given at 25-day intervals. As a rule three treatments are adequate, but if the tissue is refractory, four or five may be necessary. If the adenoids are large, a combination of surgical removal and one immediate irradiation of each side of the nasopharynx for six minutes and forty seconds is more effective than three or four radiation treatments alone.

The dosage that has been found most effective with this applicator is one gm twenty seconds on each side of the nasopharynx. During treatment the patient should lie comfortably on a couch. The applicator is dipped into a lubricant, and inserted into the nasopharynx. The middle of the radium-containing chamber should be directly in contact with the tissue of the Rosenmuller fossa or the orifice of the Eustachian tube. When the applicator is in place it should be fixed with a suitable clamp or adhesive. At the conclusion of the treatment the mucus adhering to the applicator should be removed with a brush and the applicator quickly replaced in its lead cylinder.

The nasopharynx is reexamined at the end of 3-4 weeks, and treatment repeated at this interval and subsequent intervals until satisfactory regression has occurred.

According to the author's statistics, as a result of such treatment, 19 patients with recurrent otitis media have remained well since treatment. Twenty-six patients with chronic otitis media have now had dry ears over a period of at least many months. Eight children with bronchial asthma have ceased to suffer from attacks. Fourty-three patients with unusually severe recurrent infection of the upper respiratory tract remained relatively free from this affection for at least the past winter. Nineteen ears with severe impairment of hearing have returned to normal, and 268 ears have shown definite improvement of hearing.

Of course, irradiation in itself is not the answer to any problem in otolaryngology. It should be intelligently used in connection with other forms of treatment which have proved to be of benefit in the past.—M.D.H.

RECONSTRUCTION OF BONY DEFECTS OF THE FACE, Douglas W. Macomber, M.D. Surgery, Gynecology and Obstetrics. Volume 83; No. 6; pp. 761-767. December, 1946.

An excellent article giving the author's opinions and experiences in meeting the problem of facial restoration. The subject is well discussed and the illustrations are excellent to the point that when the paper is concluded the reader has before him the following thoughts.

1. For correction of contour defects and bony losses in facial structures, several substances are available. It is my opinion that all the foreign substances should be abandoned.

2. Homogenous preserved cartilage has its useful place, particularly in replacing lost ear cartilage and in other relatively minor defects where strength or support is not a significant requirement. It should be taken from a proved 'clean' donor under aseptic conditions and kept preserved.

3. Fat is practically useless except as a local attached subcutaneous pedicle for small depressions.

4. Fascia lata is sometimes preferable for shallow depressions and probably serves more safely and dependably than a de-epithelialized skin.

5. Iliac cancellous bone is a singularly dependable, utilitarian, safe and satisfactory tissue for correction of the types of defects that have been discussed.—J.F.B.

KEY TO ABSTRACTORS

G.P. ..... Grider Penick, M.D.

M.D.H. ..... Marvin D. Henley, M.D.

J.F.B. ..... John F. Burton, M.D.

Men and Amino Acids

EMIL FISCHER—1852-1919

Emil Fischer—brilliant investigator, profound thinker, noted teacher—made possible, by his researches, most of the greatest advances in protein chemistry. His versatility and inspired imagination, coupled with a genius for experimental research, contributed basic knowledge of the greatest value to nutritional science. He did fundamental work on purines and sugars; laid the foundations of enzyme chemistry; and made stereochemistry a tool of research. He separated the amino acids from protein hydrolysates by his epoch-making distillation method; and not only ascertained many of the constituent amino acids of protein molecules but recombined them into synthetic peptides approximating natural substances, by virtue of his recognition of the peptide linkage.

His brilliant work brought him recognition from most of the important scientific societies of the world. The Royal Society awarded him the Davy Medal and elected him a foreign member, and in 1902 he became Nobel Laureate in Chemistry.

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